FILTER PAPER POD FOR COMPACTED COFFEE PORTIONS

Field of the art

The present invention relates to the technique of manufacturing compacted pods and specifically regards filter paper pods for packaging portions of ground coffee. International reference classification: B 65 b.

State of the art

The use of filter paper pods to package portions of ground products of varying particle size, such as ground coffee, ground barley, tea or other similar substances, is well known in the art.

Standardized filter paper pods, which have a certain degree of compacting and display a lenticular shape that is symmetrical in relation to the plane of the flat circular peripheral sealing zone, are likewise known. Within said flat peripheral zone the symmetrical pods display a characteristic rounded circular edge. During actual use of said standardized symmetrical pods, which have a certain degree of compacting, a drawback is manifested in that water tends initially to pass along the rounded edge rather than being forced through the central compacted part containing the product. This has the effect of reducing the quality of the brew obtained with said standardized symmetrical compacted pods.

In fact, along their rounded circular peripheral edge, said pods do not fit

tightly to the filter holder of the machine that makes espresso; as a result the water tends initially to pass through the gap formed around the edge rather than through the body of the pod.

It is thus evident that the resulting brew will have a lower quality, precisely because of the greater presence of water that has not passed through the central part of the standardized symmetrical pod.

Asymmetrical pods having a very soft exterior are also known; as they are not compacted, they must be larger in size in order to be packed with the same product weight as standardized symmetrical compacted pods.

The problem to be solved, therefore, is to produce compacted filter paper pods having a conformation such as to prevent water from escaping, at the start of the brewing process, into the gap formed at the edge of the pod and ensure that it is instead forced through the central part containing product. The solution proposed by the present invention solves all of the problems inherent in compacted filter paper pods having a standardized symmetrical shape and makes it possible to obtain espresso coffee of excellent quality.

DESCRIPTION

The invention will now be explained referring to the appended drawings, which serve solely illustrative purposes and in no way limit the scope of the invention itself.

Figure 1 shows a diametral cross-section of a compacted pod (A), which displays a shape that is asymmetrical in relation to the plane (P) of the flat circular peripheral sealing zone (Z). It may be noted that the central part (C) of the asymmetrical compacted pod (A) is coplanar with said peripheral sealing plane (P). It should also be noted that the filter paper in the central part (C) is in contact with the underlying portion of coffee contained inside the asymmetrical pod (A).

Figure 2 shows a diametral cross-section of an asymmetrical compacted pod whose central part (C') is slightly concave and sunken in relation to the plane (P) of the flat circular peripheral sealing zone (P). It should be noted that the filter paper in the central part (C') is in contact with the underlying portion of coffee contained inside the asymmetrical pod.

Figure 3 shows a diametral cross-section of an asymmetrical compacted pod having the same coplanar external shape as shown in figure 1. It should however be noted that the coffee inside the pod does not adhere to the overlying filter paper in the central part (C), which is coplanar with the plane (P) of the circular peripheral sealing zone (Z).

Figure 4 shows a diametral cross-section of an espresso machine. It illustrates the initial behaviour of water during the brewing process with a standardized symmetrical compacted pod (E).

It should be noted that, at the start of the brewing process, water tends to

flow into the gap (G) formed along the rounded peripheral edge where the edges of the top and bottom sections of the filter holder (S; I) do not perfectly match the shape of the pod (E).

In fact, around the peripheral edge there is a gap (G) which allows the water to flow downward at the start of the brewing process, without passing through the body of the pod (E). As the brewing process continues, the initial gap (G) is filled due to the swelling of the wet pod.

This situation results in a poorer quality brew precisely because the initial water fails to pass through the body of the symmetrical compacted pod (E).

Figure 5 shows a diametral cross-section of an espresso machine. It illustrates the initial behaviour of water during the brewing process with an asymmetrical compacted pod (A) whose central part (C) is coplanar with the plane (P) of the circular peripheral sealing zone (Z).

Also warranting particular attention is the fact that the diameter (D) of the cavity in the section (S) forming the top part of the brewing compartment is smaller than the diameter defining the circular zone (C) inside the peripheral sealing zone (Z) of the pod (A).

It should be noted that the upper filter holder section (S) closes to form a seal not only with the lower section (I) of the pod brewing compartment, but also with part of the central zone (C) of the body of the asymmetrical

pod (A).

This feature prevents water from escaping, even during the initial phase of brewing, into the gap (G) existing around the edge of the pod and forces the water through the central part, thereby ensuring, right from the start of the process, a homogenous, high quality brew.

Figure 6 is analogous to figure 5 and serves to highlight that a high quality brew may also be obtained using compacted pods (A') packed with a lower product weight.

The improvement in the brewing process prevents the undesired initial flow of water through the gap (G) and thus ensures greater uniformity of the brew, which is of good quality.

An extended series of practical trials has demonstrated that good quality espresso may also be obtained with compacted pods containing reduced quantities of coffee.

The figures also highlight the simplicity of producing the compacted pod of the present industrial invention.

In the figures the individual details are marked as follows:

A indicates an asymmetrical compacted pod containing the same quantity of product as a standardized symmetrical compacted pod (E).

A' indicates an asymmetrical compacted pod containing a smaller quantity of product.

C indicates the flat central part of an asymmetrical pod.

C' indicates the slightly concave part of an asymmetrical pod.

D indicates the diameter of the cavity in the upper section (S) of the filter holder .

E indicates a compacted pod having a standardized symmetrical shape .

G indicates the gap formed between the edge of the pod and the brewing compartment.

I indicates the lower section of the pod brewing compartment.

P indicates the plane of the peripheral sealing zone of a pod.

S indicates the upper section of the pod brewing compartment.

Z is the coplanar edge of a peripherally sealed pod.

The invention naturally lends itself to different embodiments as regards both the dimensions and structural proportions, as well as the technological choices in respect of the materials to be used in the manufacturing process.

It is evident that the pod diameter, thickness and degree of compactness will be adapted to market demands.

The innovative concept underlying the present invention essentially consists in the asymmetric shape of the compacted pod and the substantial coplanarity between the central part (C) and the plane (P) of the circular peripheral sealing zone (Z) of the pod.

Now that the inventive combinations of the present invention have been made apparent, anyone with average skill in the art may produce, by means of simple and obvious practical deductions, without expending any inventive effort, asymmetrical compacted pods reproducing the original characteristics of the present invention as substantially described, illustrated and claimed below.